

**Work Order ID 112980**

Tuesday, February 11, 2014 9:16:35 AM

**\*112980\***

Page 1

**Item ID:** D3447-7

**Revision ID:**

Item Name: Clevis

Start Date: 2/11/2014 Start Qty: 10.00

\*10\*

Required Date: 2/28/2014 Req'd Qty: 10.00

\*10\*

### Reference:

### Approvals:

## Process Plan: WF

Date: 14-7-11

## Tooling

em ID:

**Customer:**

## Setup Start

\*NS1\*

**Stop**

\*NS2\*

85.

Date: \_\_\_\_\_

### SPC (Y/N)

P-4

Run Start

\*ND1\*

## Stop

## INTRODUCTION

Sequence ID/ Work Center ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr									
D3447	Rev A									
100 <b>*100*</b> Doosan	Hardinge CNC LATHE SMALL		0.00							SAS 40 9-89
120 <b>*120*</b> QC Quality Control	QC2- Inspect parts off machine FAI/FAIB	<b>Memo</b> Turn as per Folio Dwg Rev: <u>A</u> Folio Rev: <u>NA</u>	0.00	✓	14-2-25					14/02/24
130 <b>*130*</b> QC Quality Control	QC8- Inspect parts - second check	<b>Memo</b>	0.00	✓	14-2-25					SAS 40 9-89

NCR: Yes / No

DQA:                      Date:

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other				
Part No. _____											
NCR No. _____											
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear			General								
Bending	Bend	Grain	Ovalized	Pressure/Forced							
Centre Not Concentric to O/S	BOM/Route	Hardware	Over/Under tolerance	Temperature/Cure							
Cracks	Broken/Damaged	Inspection Incomplete	Part Incorrect	Weld							
Crushed/Crimped	Burrs	Instructions Incomplete/Unclear	Part Lost/Missing	Wrong Stock Pulled							
Cuffs	Contamination	Maintenance	Part Moved								
Heat Treat	Countersink	Mislabeled	Positioned Wrong								
Inspection Strip in Tube	Cut Too Short	Misread	Power Loss/Surge								
Ripples in Bend	Drill Holes	Offset									
Torque Waves in Extrusion	Drawing	Out of Calibration									
Turning Sequence	Finish	Out of Sequence									
Wave/Twist in Tube	Folio	Outside Dimensions									

**Work Order ID 112980**

Tuesday, February 11, 2014 9:16:35 AM

**\*112980\***

Page 2

Item ID: D3447-7

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Clevis

Stop

**\*NS2\***

Start Date: 2/11/2014

Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 2/28/2014

Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

**\*140\***

HandFinish

Hand Finishing

10 7614227

150

Green Sandtex(Ref:4.3.5.8) per QSI005 4.3

0.00

**\*150\***

Powdercoat

Powder Coating

Memo

0.00

Mask square section START TIME:

1:40 OVEN

TEMPERATURE: 300° FINISH TIME:

2:10

10 6 14-3-4 29 29

160

QC3- Inspect Part Finish

0.00

DAS

27

9:30

**\*160\***

QC

Quality Control

Memo

0.00

W/3/2

b

NCR: Yes / No

DQA: Date: ✓

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other				
Part No. _____											
NCR No. _____											
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
Bending Centre Not Concentric to O/S Cracks Crushed/Crimped. Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube				Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing Finish Folio Grain Hardware Inspection Incomplete Instructions Incomplete/Unclear Maintenance Mislabeled Misread Offset Out of Calibration Out of Sequence Outside Dimensions							
				Ovalized Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved Positioned Wrong Power Loss/Surge							
				Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other							

**Work Order ID 112980**

Tuesday, February 11, 2014 9:16:35 AM

**\*112980\***

Page 3

Item ID: D3447-7

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Clevis

Stop

**\*NS2\***

Start Date: 2/11/2014 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 2/28/2014 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	<b>*NR1*</b>
	QC:	Date:	SPC (Y/N):	Date:	Stop		<b>*NR2*</b>

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Identify as per dwg & Stock Location: <u>Mezz</u>	0.00							
<b>*170*</b> Packaging	Memo	0.00							
Packaging									

180

QC21- Final Inspection - Work Order Release

0.00

**\*180\***  
QC  
Quality Control

Memo

0.00

<u>10X</u>	<u>DAS</u>
<u>28</u>	<u>28</u>
<u>989</u>	<u>14-03-5</u>

RL 14-03-6  
MM 14-03-06

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

# Picklist Print

Tuesday, February 11, 2014 9:16:34 AM

Page 1

Work Order ID: 112980

Parent Item: D3447-7

Parent Item Name: Clevis

Comments: IPP A05.08.26New issueKJ/JLM

Start Date: 2/11/2014

Required Date: 2/28/2014

Start Qty: 10.00

Required Qty: 10.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6R1.250 6061-T6 Round Bar 1.250		Purchased	No			100	f	31.0000	0.4412	5		14-2-25	

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT013	31	
→ m126593	31	5 Rf

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

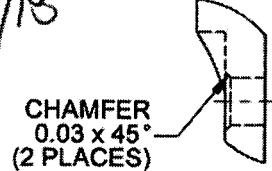
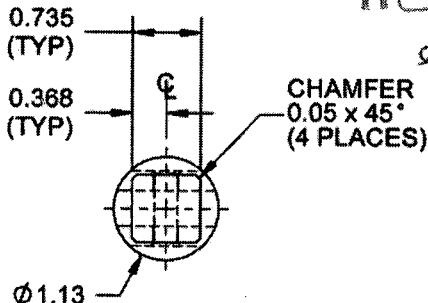
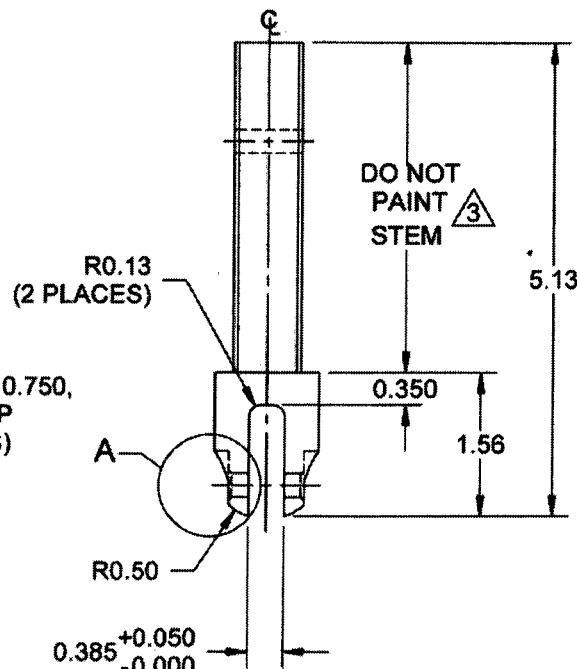
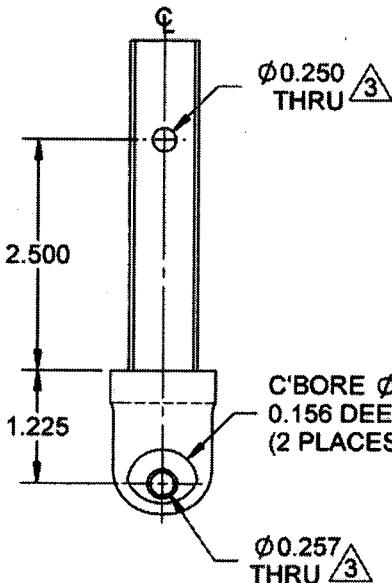
Work Order: _____ Part No. _____ NCR No. _____				<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
Bending Centre Not Concentric to O/S Cracks Crushed/Crimped. Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube				Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other <input type="checkbox"/>							

**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3447	REV. A SHEET 3 OF 4
DATE	05.07.19	TITLE BLADE FOLD KIT PARTS	SCALE 1:2

**RELEASED**

05/08/18

DETAIL A  
SCALE 1:1**D3447-7 CLEVIS****SUPERCEDES PREMIER P/N B67-43001-145/-345****NOTES:**

- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T652) ROUND BAR PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR PER AMS-QQ-A-200/8 (OR AMS 4160) (REF. DART SPEC. M6061T6R1.125)
- 2) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) MASK AND COVER INSIDE HOLES AS SHOWN PRIOR PAINTING
- 4) FINISH: POWDER COAT PAINT GREEN SANTEX (4.3.5.8) PER DART QSI 005 4.3
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES
- 7) BREAK ALL SHARP EDGES 0.005 TO 0.010

**COPYRIGHT © 2005 BY DART AEROSPACE LTD.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS																		
			Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Use-as-is <input type="checkbox"/>	Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Machining <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/>	Quality <input type="checkbox"/>	Other <input type="checkbox"/>			
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description			Sign & Date	Verification		QC Inspector											
Doc/Data																								
Equip/Tooling																								
Operator																								
Material																								
Setup																								
Other																								
Process																								
Supplier																								
Training																								
Unapproved																								
FAULT CATEGORY																								
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube					<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio					<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions					<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge					<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled				

DART AEROSPACE LTD	Work Order:	112980
Description: Clevis	Part Number:	D3447-7
Inspection Dwg: D3447	Rev: A	Page 1 of 1

# FIRST ARTICLE INSPECTION CHECKLIST

## X First Article      X Prototype

~~DAS~~

Measured by:	40 9-89	Audited by:	FK	Prototype Approval:	N/A
Date:	14/02/24	Date:	14/02/25	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	05.09.19	New Issue	KJ/JLM <i>✓</i>	<i>✓</i>

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS														
			Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Machining <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/>	Quality <input type="checkbox"/>	Other <input type="checkbox"/>
Part No. _____			Work Order Update <input type="checkbox"/>																	
NCR No. _____																				
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance			Initial Chief Eng	Action Description			Sign & Date	Verification			QC Inspector					
Doc/Data																				
Equip/Tooling																				
Operator																				
Material																				
Setup																				
Other																				
Process																				
Supplier																				
Training																				
Unapproved																				
FAULT CATEGORY																				
Landing Gear				General																
				Bending <input type="checkbox"/>	Bend <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/>												
Centre Not Concentric to O/S				BOM/Route <input type="checkbox"/>	Hardware <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>													
Cracks <input type="checkbox"/>				Broken/Damaged <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Weld <input type="checkbox"/>													
Crushed/Crimped. <input type="checkbox"/>				Burrs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>													
Cuffs <input type="checkbox"/>				Contamination <input type="checkbox"/>	Maintenance <input type="checkbox"/>	Part Moved <input type="checkbox"/>														
Heat Treat <input type="checkbox"/>				Countersink <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>														
Inspection Strip in Tube <input type="checkbox"/>				Cut Too Short <input type="checkbox"/>	Misread <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>	Other <input type="checkbox"/>													
Ripples in Bend <input type="checkbox"/>				Drill Holes <input type="checkbox"/>	Offset <input type="checkbox"/>															
Torque Waves in Extrusion <input type="checkbox"/>				Drawing <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>															
Turning Sequence <input type="checkbox"/>				Finish <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>															
Wave/Twist in Tube <input type="checkbox"/>				Folio <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>															